

SAKAI ET AL. -- 10/674,506  
Client/Matter: 008312-0306165

### REMARKS

By this Amendment, claims 1, 2, 10-16 and 18-19 are amended, and claims 17 and 21 are canceled without prejudice or disclaimer to the subject matter therein. Support for the amendment to claim 1 may be found, for example, in FIG. 1 and its corresponding description. Claims 10-16 and 18-19 are amended to correct minor clerical mistakes. Accordingly, after entry of this Amendment, claims 1-16 and 18-20 will remain pending in the patent application. Reconsideration and allowance of the present patent application based on the foregoing amendments and following remarks are respectfully requested.

As a preliminary matter, Applicants respectfully note that claim 10 has not been rejected or objected to in the detailed section of the Office Action. Accordingly, Applicants respectfully submit that claim 10 is in condition for allowance.

Claim 1 was rejected under 35 U.S.C. §102(b) based on Sakai (JP-2001-266301). The rejection is respectfully traversed.

Claim 1 is patentable over Sakai at least because this claim recites a disk drive for perpendicular magnetic recording comprising, *inter alia*, a high-pass filter which carries out removal of low-frequency noise of the data signal outputted from the head and a decoding unit which decodes recording data from the data signal, wherein the read channel includes an extracting unit which extracts a component of a shift in a base line of the data signal processed by the signal processing unit, and a compensating unit which removes the component of the shift in the base line from the data signal. Sakai does not disclose, teach or suggest these features. Therefore, Sakai does not disclose, teach or suggest each and every feature recited by claim 1 and, as a result, cannot anticipate this claim.

Sakai merely discloses a data channel 1 that removes noise coming from the fringe magnetizing area from a mixed reproduction signal. (See Abstract). Sakai discloses that the data channel 1 includes a noise removing circuit 2, which comprises an analog delay circuit 3, an amplitude equalization circuit 4 and an adder circuit 5, and a low pass filter 6. (See Abstract, FIG. 1 and paragraphs [0019]-[0020]). However, Sakai is completely silent about a high pass filter configured to remove low-frequency noise, an extracting unit and a compensating unit as recited in claim 1. In particular, Applicants respectfully submit that the elements 1, 3, 4 and 5 in Sakai are not configured "to extract a component of a shift in a base line of the data signal processed by the signal processing unit." It is respectfully noted that the Examiner has failed to identify which elements in Sakai correspond to the extracting unit

SAKAI ET AL. -- 10/674,506  
Client/Matter: 008312-0306165

and the compensating unit of claim 1. For at least these reasons, claim 1 is patentable over Sakai.

Applicants also respectfully note that the disk drive of claim 1 differs from the disk drive of Sakai in terms of structure and subject matter. Specifically, the disk drive of Sakai is not configured to carry out the functions of the disk drive of claim 1. For at least this reason, Sakai cannot anticipate claim 1.

Accordingly, reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. §102(b) based on Sakai are respectfully requested.

Claims 2-9, 11-13 and 20 were rejected under 35 U.S.C. §103(a) based on Sakai in view of Jiang *et al.* (U.S. Pat. No. 6,621,649) (hereinafter "Jiang"). The rejection is respectfully traversed.

Claims 2-8 depend from claim 1 and are, therefore, patentable over Sakai for at least the same reasons provided above in connection with claim 1, and for the additional features recited therein.

Jiang fails to remedy the deficiencies of claim 1. In particular, Jiang fails to disclose, teach or suggest a disk drive for perpendicular magnetic recording wherein, *inter alia*, the read channel includes an extracting unit which extracts a component of a shift in a base line of the data signal processed by the signal processing unit, and a compensating unit which removes the component of the shift in the base line from the data signal. Jiang merely discloses a system and a method for reducing a write-to-read switching time in a hard disk drive preamplifier circuit. (See col. 3, lines 50-52). Jiang is completely silent about an extracting unit and a compensating unit as recited in claim 1. It is noted that Jiang was merely cited by the Office Action for the purpose of allegedly disclosing the additional features of claims 2-8, not an extracting unit or a compensating unit. Therefore, the combination of Sakai and Jiang cannot result, in any way, in the invention of claims 2-8. For at least this reason, claims 2-8 are patentable over Sakai, Jiang or a combination thereof.

In addition, Applicants respectfully submit that Jiang fails to disclose, teach or suggest the additional features recited in claims 2-8. For example, Jiang fails to disclose the features of claims 3 and 4.

The Office Action stated on page 4, line 21 that "RE claims 5-8 the combination of Sakai and Jiang is relied upon for the same reasons of rejection as stated above." The Office Action then went on to state: "claims 5-8 have limitations similar to those treated in the above rejections of claims 3-4 and are met by the references as discussed above." Applicants

SAKAI ET AL. -- 10/674,506  
Client/Matter: 008312-0306165

respectfully disagree and submit that claims 5-8 are directed to different embodiments of the invention. Because the Examiner has not clearly identified a ground of rejection for each claim, it is respectfully submitted that the Official Action is not complete as to all matters. Accordingly, in the event the rejection of all pending claims is maintained, the Examiner is respectfully requested to provide in the next Office Action the reasons as to why claims 5-8 are not patentable over the art of record. Otherwise, Applicants respectfully submit that claims 5-8 are in condition for allowance.

Claim 9 recites a disk drive using a disk medium in which a plurality of groups of data tracks for recording a data signal is formed by a perpendicular magnetic recording method and each group of data tracks is managed in each plurality of zones, comprising, *inter alia*, an extracting unit which extracts a component of a shift in a base line included in the data signal according to difference data between the sample data and an ideal sample data; and a compensating unit which removes the component of the shift in the base line from the data signal to transmit the data signal to the signal processing unit. As mentioned previously in the discussion related to claim 1, neither Sakai nor Jiang discloses, teaches or suggests this feature. Therefore, a reasonable combination of Sakai and Jiang cannot result, in any way, in the invention of claim 9. For at least this reason, claim 9 is patentable over Sakai, Jiang or a combination thereof.

Claims 11-13 are patentable over Sakai, Jiang or a combination thereof at least by virtue of their dependency from claim 9, and for the additional features recited therein.

Claim 20 recites a read channel which is applied to a disk drive using a head to read out a data signal recorded in a disk medium by a perpendicular magnetic recording method and processes the data signal outputted from the head by a PRML signal processing method to reproduce recording data, comprising, *inter alia*, an extracting unit which extracts a component of a shift in a base line included in the data signal according to difference data between the sample data and an ideal sample data, the extracting unit including an integrating circuit or a gain adjusting circuit which has a high-frequency cut-off filter or high-frequency cut-off characteristics and generating a signal corresponding to the component of the shift in the base line; [and] a compensating unit to remove the component of the shift in the base line from the data signal to transmit the data signal to the signal processing unit. As mentioned previously in the discussion related to claim 1, neither Sakai nor Jiang discloses, teaches or suggests this feature. Therefore, a reasonable combination of Sakai and Jiang cannot result,

SAKAI ET AL. -- 10/674,506  
Client/Matter: 008312-0306165

in any way, in the invention of claim 20. For at least this reason, claim 20 is patentable over Sakai, Jiang or a combination thereof.

The Office Action stated on page 6, lines 4-6, that "method claim 20 corresponds to apparatus claim 9 and is rejected for the same reasons of obviousness as used above." Applicants respectfully disagree and submit that claim 20 is an apparatus claim, not a method claim, that contains additional features that are not recited in claim 9. For example, claim 20 recites "a register to adjust a cut-off frequency parameter of the high-frequency cut-off filter and a gain parameter set in the gain adjusting circuit." It is respectfully submitted that the Examiner has failed to identify where in Jiang or Sakai such register is disclosed. Accordingly, in the event the rejection of claim 20 is maintained, the Examiner is respectfully requested to provide in the next Office Action the reasons as to why claim 20 is not patentable over the art of record. Otherwise, Applicants respectfully submit that claim 20 is in condition for allowance.

Accordingly, reconsideration and withdrawal of the rejection of claims 2-9, 11-13 and 20 under 35 U.S.C. §103(a) based on Sakai in view of Jiang are respectfully requested.

Claims 14-19 and 21 were rejected under 35 U.S.C. §103(a) based on Sakai in view of Jiang and further in view of Li (U.S. Pat. No. 6,501,611). The rejection is respectfully traversed.

Claims 17 and 21 are canceled without prejudice or disclaimer to the subject matter therein, thus rendering moot the rejection of claims 17 and 21.

Claim 19 depends from claim 1 and is, therefore, patentable over Sakai for at least the same reasons provided above in connection with claim 1.

Jiang and Li fail to remedy the deficiencies of Sakai. As mentioned above, Jiang fails to disclose, teach or suggest a disk drive for perpendicular magnetic recording comprising, *inter alia*, an extracting unit which extracts a component of a shift in a base line of the data signal processed by the signal processing unit, and a compensating unit which removes the component of the shift in the base line from the data signal. It is respectfully submitted that Li fails to disclose these features. Li merely discloses an apparatus and a method for recovering data during a read operation of a magnetic memory device when an error is detected. (See col. 2, lines 19-21). However, Li is completely silent about an extracting unit and a compensating unit as recited in claim 19. Therefore, a combination of Sakai, Jiang and Li cannot result, in any way, in the invention of claim 19. For at least this reason, claim 19 is patentable over Sakai, Jiang, Li or a combination thereof.

SAKAI ET AL. -- 10/674,506  
Client/Matter: 008312-0306165

Claims 14-16 and 18 depend from claim 9 and are therefore patentable for at least the same reasons provided above in connection with claim 9 and for the additional features recited therein.

Li fails to remedy the deficiencies of Sakai and Jiang because Li fails to disclose, teach or suggest a disk drive using a disk medium in which a plurality of groups of data tracks for recording a data signal is formed by a perpendicular magnetic recording method and each group of data tracks is managed in each plurality of zones, comprising, *inter alia*, an extracting unit which extracts a component of a shift in a base line included in the data signal according to difference data between the sample data and an ideal sample data; and a compensating unit which removes the component of the shift in the base line from the data signal to transmit the data signal to the signal processing unit. It is noted that Li was merely cited by the Office Action for the purpose of allegedly disclosing the additional features of claims 14-16 and 18. Therefore, the combination of Sakai, Jiang and Li cannot result, in any way, in the invention of claims 14-16 and 18. For at least this reason, claims 14-16 and 18 are patentable over Sakai, Jiang, Li or a combination thereof.

Accordingly, reconsideration and withdrawal of the rejection of claims 14-16, 18 and 19 under 35 U.S.C. §103(a) based on Sakai in view of Jiang and further in view of Li are respectfully requested.

The rejections having been addressed, Applicants request issuance of a notice of allowance indicating the allowability of all pending claims. If anything further is necessary to place the application in condition for allowance, Applicants request that the Examiner contact Applicants' undersigned representative at the telephone number listed below.

SAKAI ET AL. -- 10/674,506  
Client/Matter: 008312-0306165

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,  
PILLSBURY WINTHROP SHAW  
PITTMAN LLP



CHRISTOPHE F. LAIR  
Reg. No. 54248  
Tel. No. 703. 905.2097  
Fax No. 703. 905. 2500

JDK/CFL  
P.O. Box 10500  
McLean, VA 22102  
(703) 905-2000